

### **REMARKS**

Applicants thank the Examiner for the very thorough consideration given the present application. Claims 1-15 are currently pending in this application. No new matter has been added by way of the present Amendment. For instance, new claims 13-15 find support at, for example, pages 12-14 of the present Specification. Accordingly, no new matter has been added.

In view of the amendments and remarks herein, Applicants respectfully request that the Examiner withdraw all outstanding rejections and allow the currently pending claims.

### **Issues under 35 U.S.C. 102(b)**

The Examiner maintains the previous rejection of claims 1-12 under 35 U.S.C. 102(b) as anticipated by Yamamoto et al. (hereinafter Yamamoto '153). Applicants respectfully traverse.

The Examiner asserts that Yamamoto '153 teaches the presently claimed copolymer, and further teaches an electrolyte obtained by dissolving  $\text{LiPF}_6$  in the concentration of 1 mol/liter into a solvent of 1:2 mixture of ethylene carbonate and diethyl carbonate. The Examiner thus concludes that the copolymer of Yamamoto '133 inherently exhibits a swelling degree of 4 or below. Moreover, the Examiner asserts that the Declaration under 37 C.F.R. 1.132 filed on August 18, 2008 is insufficient to overcome the rejection of claims 1-12 because a Declaration can not be used to overcome a 102(b) rejection.

Applicants submit that the Examiner has failed to establish a *prima facie* case of anticipation. For anticipation under 35 U.S.C. §102, the reference must teach each and every aspect of the claimed invention either explicitly or impliedly. Any feature not directly taught must be inherently present. The fact that a certain result or characteristic may occur or be present

in the prior art is not sufficient to establish the inherency of that result or characteristic. *In re Rijckaert*, 9 F.3d 1531, 28 USPQ2d 1955 (Fed. Cir. 1993). To establish inherency, the extrinsic evidence "must make clear that the missing descriptive matter is necessarily present". *In re Robertson*, 169 F.3d 743, 49 USPQ2d 1949 (Fed. Cir. 1999). The mere fact that a certain thing may result from a given set of circumstances is not sufficient. *Id.*

The present invention is directed, *inter alia*, to a binder for an electrode of a lithium ion secondary battery, which comprises a copolymer comprising: 15 to 80 weight% of units from an ethylenically unsaturated monomer (A) whose homopolymerization yields a polymer soluble in N-methylpyrrolidone (NMP); and 20 to 85 weight% of units from an ethylenically unsaturated monomer (B) whose homopolymerization yields a polymer insoluble in NMP, **wherein the copolymer exhibits a swelling degree of 4 or below** (emphasis added) (e.g., claim 1). Moreover, the present invention is directed to a slurry composition for an electrode of a lithium ion secondary battery (see, e.g., claim 8), and a production method for a lithium ion secondary battery electrode (see, e.g., claim 10). Yamamoto '153 does not explicitly or implicitly teach or suggest a binder, slurry or method as claimed.

Initially, Applicants note that the Examiner's position with regard to the admissibility of the previously filed Rule 132 Declaration is incorrect. As previously discussed, a Declaration may be used to rebut a *prima facie* case of anticipation by showing lack of inherency in the cited reference. As such, Applicants submit that sufficient evidence has been presented which clearly rebuts the Examiner's *prima facie* case of anticipation, and shows that the binder of Yamamoto '153 does not have a swelling degree in the claimed range. Thus, it is respectfully submitted that

the Examiner must consider the results of the Declaration and withdraw the outstanding rejection.

Yamamoto '153 discloses a binder comprising (a) structural units derived from a monoethylenically unsaturated carboxylic acid ester monomer, (b) structural units derived from a monoethylenically unsaturated carboxylic acid monomer, and (c) structural units derived from a conjugated diene monomer. Yamamoto '153 does not disclose a binder having a swelling degree of 4 or below, or a method of producing a binder having a swelling degree of 4 or below.

As previously discussed, the swelling degree of a binder is determined not only by the monomer composition, but also by the production method of the binder. For example, the binder of Applicants' Comparative Example 1 has the same monomer composition as the binder of Applicants' Example 1. However, the binder of Comparative Example 1 is produced with polymerization conversion ratios in first and second stages which are different from the conversion ratios of Example 1. As a result, the obtained binder dissolves in an electrolyte. Similarly, the binder of Applicants' Comparative Example 2 has the same monomer composition as that claimed in present claims 1 and 2. However, the binder of Comparative Example 2 is produced by polymerizing the monomer at once. The obtained binder dissolves in an electrolyte. Thus, the binder of Applicants' Comparative Examples 1 and 2 does not have a swelling degree of 4 or below. Similarly, the binder of Yamamoto '153 fails to exhibit a swelling degree of 4 or below.

The Examiner's attention is directed to newly added claims 13-15, which require that the multistage-polymerization of the components (a) and (b) comprises two or three steps (see, e.g., claim 13). Moreover, the newly added claims require specific polymerization conversion ratios

(see, e.g., claims 14-15). Applicants have discovered that according to one embodiment, superior and unexpected results are obtained (e.g., a binder having a swelling degree of 4 or below can be obtained) when the conversion ratios are maintained at the claimed ranges.

Yamamoto '153 fails to explicitly or implicitly teach each and every limitation of the present invention and thus fails to anticipate the same. Accordingly, reconsideration and withdrawal of this rejection are respectfully requested.

### **Conclusion**

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding rejections and objections and that they be withdrawn. It is believed that a full and complete response has been made to the outstanding Office Action and, as such, the present application is in condition for allowance.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Vanessa Perez-Ramos, Reg. No. 61,158, at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

